☒ Responsive to communication(s) filed on _Mar 18, 1998_____.

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire ____3____ month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) _1-27_____ is/are pending in the application.

     Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) _1-27_____ is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐approved ☐disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

     ☒ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

         ☒ received.

         ☐ received in Application No. (Series Code/Serial Number) _____ .

         ☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

     *Certified copies not received: _____ .

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). ___4___

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- *SEE OFFICE ACTION ON THE FOLLOWING PAGES* ---

DETAILED ACTION

Drawings

1. This application has been filed with informal drawings which are acceptable for

examination purposes only. Formal drawings will be required when the application is allowed.

Claim Rejections - 35 USC §101

2. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter,
> or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements
> of this title.

3. Claims 11-17 are rejected under 35 U.S.C. 101 because the claimed invention is directed

to non-statutory subject matter.

The claims, as presently claimed and best understood were reconsidered in light of the

"Examination Guidelines for Computer-Related Inventions" and were found to be non-statutory.

Discussion of the analysis of the claims under the guidelines follows. The claims do not recite

descriptive material per se. The claims do recite a series of steps to be performed on a computer.

The specification does not recite a specific machine or manufacture, because the specification

does not disclose specific hardware or software. "Specific software" is defined as a set of

instructions implemented in a specific program code segment.   See Computer Dictionary 78

(Microsoft Press, 2d ed. 1994) for definition of "Code segment." The present specification

defines no such instructions. Therefore, the claims are not intended to be limited to specific

software and the claimed invention encompasses any and every computer-implementation of the process. For this reason, the underlying processes are evaluated.

As to Claims 11-17, the invention is not implemented on a specific apparatus; therefore, the invention is not directed to the technological arts. To be statutory, the utility of an invention must be within the technological arts. In re Musgrave, 431 F.2d at 893, 167 USPQ at 289-90, cited with approval in In re Schrader, 22 F.3d at 297, 30 USPQ 2d at 1461 (Newman, J., dissenting). The definition of "technology" is the "application of science and engineering to the development of machines and procedures in order to enhance or improve human conditions, or at least to improve human efficiency in some respect." (Computer Dictionary 384 (Microsoft Press, 2d ed. 1994)). When one looks to the present specification to determine what the applicant has invented, the invention appears to be a series of steps performed on a computer. However, while Claims 1-10 and 18-27 recite an apparatus, Claims 11-17 do not. In view of the recitation of an apparatus in Claims 1-10 and 18-27, it is clear that Claims 11-17 are intended to be directed to the abstract method apart from the apparatus for performing the method. Therefore, Claims 11-17 are non-statutory, because they are directed solely to an abstract idea without practical application in the technological arts. In re Schrader, 22 F.3d at 293-94, 30 USPQ 2d at 1458-59; In re Warmerdam, 33 F.3d at 1360, 31 USPQ 2d at 1759.

It is for these reasons that these claims are deemed to be non-statutory.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1, 11, 12, 19, 24, and 25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

6. As per Claim 1, lines 11-12, the wording "substantially on the basis of data held in the data store" is indefinite.

7. As per Claim 11, line 6, the wording "substantially on the basis of said data" is indefinite.

8. As per Claim 19, line 3, the term "virtual organisation" is confusing and indefinite.

9. As per Claim 24, line 2, the wording "may have" is indefinite.

10. As per Claim 25, line 2, the wording " absent condition" is confusing.

11. Claim 12 recites the limitation "said information" in lines 1-2. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless --
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

13.   Claim 21 is rejected under 35 U.S.C. 102(b) as being anticipated by McAtee et al., U.S. Patent No. 5,301,320.

As per Claim 21, *McAtee et al.* disclose a method of business process enactment, said method being implemented in a distributed computing environment [Fig. 4] including at least one service provider and at least one service requester [Fig. 2 (shows orders received from a service requester being processed by a service provider)], said service provider comprising an input to receive a request from the or any service requester within said environment [Fig. 2; a customer uses a data entry program (as mentioned at col. 7, lines 17-19) operated on a computer to input a service request into the system], an output to provide a response to said service requester [*Id.* A reasonable inference would be that the user would receive responses from the system via the data entry computer as to the status of the order], processing means to process said request to determine the nature of said response [Fig. 2 ("Process Order")], means to access an updatable data store for storing parameters indicative of the present capacity of the service provider to provide the service [Fig. 2 ("Determine Whether Goods in Inventory")], and a control output to one or more resources in the environment available for use by said service provider [Fig. 2, ref. no. 22 ("Print Invoice") implying that the system comprises a printer output means], wherein the processing means is adapted to determine the nature of said response on the basis of the data stored in the data store [col. 7, lines 17-19 (data entry updates the data store with information entered by the service requester, the order is processed based on the nature of this information)];

Claim Rejections - 35 USC § 103

14.   This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

15.   As written, claims 16 and 17 are dependent on claim 1. However, it is apparent that applicant meant to have these claims depend on independent claim 11. Therefore, this application has been examined as if claims 16 and 17 were dependent on claim 11.

16.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

17.   Claims 1-15, 18-20, and 22-27 are rejected under 35 U.S.C. 103(a) as being unpatentable overMcAtee et al., U.S. Patent No. 5,301,320, in view of *Preference-Based Decision Making for Cooperative Knowledge-Based Systems* (Wong; ACM Transactions on Information Systems).

    As per <u>Claim 1</u>, *McAtee et al.* disclose a service provisioning system for use in providing services in a distributed processing environment, said system comprising:

an input connected to a distributed processing environment for receiving a service request

from an entity [Fig. 2; a customer uses a data entry program (as mentioned at col. 7, lines 17-19)

operated on a computer to input a service request into the system];

a response output connected to said distributed processing environment for providing a

response to the entity [*Id.* A reasonable inference would be that the user would receive responses

from the system via the data entry computer as to the status of the order];

processing means to process the service request and provide a response thereto [Fig. 2

("Process Order")]; and

means to access an updatable data store for storing parameter(s) indicative of the available

capacity of the system to provide the service [Fig. 2 ("Determine Whether Goods in Inventory")];

wherein the processing means is adapted to decide, substantially on the basis of data held

in the data store, whether to provide a service or to decline to provide a service [the goods would

be sent based on availability, as per the inventory level].

McAtee et al. does not disclose that the processing means is adapted to propose

conditions under which the system is willing to provide a service.

Wong teaches processing means adapted to propose conditions under which a system is

willing to provide a service [page 414, Section 2.3 (negotiation and compromise) E.g., the

solution could be to provide the customer with a "rain check" or offer substitute merchandise or

services)]. It would have been obvious to one of ordinary skill in the art at the time the invention

was made to incorporate the flexible decision making of *Wong* into the service provisioning

system of *McAtee et al*. The motivation would have been to increase customer satisfaction.

As per Claim 2, *McAtee et al*. disclose means for scheduling tasks/resources to provide a

service [col. 5, lines 24-42 (workflow)].

As per Claim 3, *McAtee et al*. disclose means for scheduling a component service to

provide a requested service [col. 5, lines 24-42 (goal)].

As per Claim 4, *McAtee et al*. disclose a system according to claim 2, wherein the

processing means is adapted, in response to a failure by the scheduling means to schedule a

task/resource or component service, to: reschedule the task/resource/component service; transmit

a message to the entity that the originally requested service can only be provided under different

conditions; relocate the service with another service providing entity; or indicate to the entity that

this service cannot be provided [col. 6, lines 42-45; "A goal can be restricted to running (i.e.,

remain 'valid') only during particular times during the day, and can be given a maximum allowed

execution time". Thus, if the goal timed out, the entity requesting the service would have to be

notified that the service cannot be provided].

As per Claim 5, *McAtee et al*. disclose a system according to claim 1, wherein the

processing means is adapted, in response to the inability of a resource or component service to be

completed successfully, to: reschedule the tasks/services; transmit a message to the entity that the

originally requested service can only be provided under different conditions; relocate the service

with another service providing entity; or indicate to the entity that the service cannot be provided

[col. 6, lines 42-45; "A goal can be restricted to running (i.e., remain 'valid') only during particular times during the day, and can be given a maximum allowed execution time". Thus, if the goal timed out, the entity requesting the service would have to be notified that the service cannot be provided].

As per Claim 6, McAtee et al. disclose a system according to claim 1, wherein the way in which the processing means is adapted to make a decision is that the processing means is adapted to process a service request by accessing one or more parameters in the data store, processing the request using the one or more parameters, and producing a response at the output, which response is selected from indications that

a) sufficient capacity is available to provide the service;

b) insufficient capacity is available to provide the service; and

c) sufficient capacity is available to provide the service if modified, together with associated modifications.

[Fig. 2 ("Determine Whether Goods in Inventory"). The system would check for sufficient / insufficient inventory capacity to fill the order. It would be reasonable to assume that such a system would also check whether goods are on order, so that the service could be provided if the inventory levels were increased].

As per Claim 7, McAtee et al. disclose a system according to claim 1, comprising a control output connected by said distributed processing environment to one or more tasks and/or resources required to provide the service [Fig. 3].

As per Claim 8, McAtee et al. disclose a system according to claim 7, wherein the processing means is adapted to receive data from the tasks and/or resource(s) for use in updating the data store [Table 2].

As per Claim 9, McAtee et al. disclose a system according to claim 8, wherein said data includes task/resource performance and/or task/resource status data [Table 2 (task status)].

As per Claim 10, McAtee et al. disclose a system according to claim 1, comprising a request output connected to said distributed processing environment for requesting a component service from another entity [Fig. 2].

As per Claim 11, McAtee et al. disclose a service provisioning system [Fig. 2] comprising means for transacting with another entity [Fig. 2; a customer uses a data entry program (as mentioned at col. 7, lines 17-19) operated on a computer to input a service request into the system], in response to a request from said other entity, to provide a service and means for accessing one or more resources available for use by the system to provide a service [Id. (e.g., mail order)], said transacting means including data about said system relating to a measure of the current system capacity to provide a service [Fig. 2 ("Determine Whether Goods in Inventory")], and being arranged to transact substantially on the basis of said data to provide a service in response to a request.

McAtee et al. does not disclose negotiation.

Wong teaches negotiation [page 414, Section 2.3 (negotiation and compromise) E.g., the solution could be to provide the customer with a "rain check" or offer substitute merchandise or

services)]. It would have been obvious to one of ordinary skill in the art at the time the invention

was made to include the negotiation means of *Wong* with the service provisioning system of

McAtee et al. The motivation would have been to ensure the use of flexible decision making in

dealing with customers in order to increase customer satisfaction.

As per Claim 12, *McAtee et al.* disclose means to update said information on the basis of

the past performance of the system [the inventory levels would be updated based on the usage].

As per Claim 13, *McAtee et al.* disclose means to schedule resources(s) for use by the

system necessary to provide a service [col. 5, lines 24-42 (workflow)].

As per Claim 14, *McAtee et al.* does not disclose means to initiate the negotiating means

to re-open negotiation with the entity which requested the service in the event one or more

resources cannot be scheduled. *Wong* teaches means to initiate the negotiating means to re-open

negotiation with the entity which requested the service in the event one or more resources cannot

be scheduled [page 411; Fig. 1 (at step 3 "negotiation & revision")]. It would have been obvious

to one of ordinary skill in the art at the time the invention was made to combine this feature

taught by *Wong* into the service provisioning system of *McAtee et al.* The motivation would have

been to provide grater flexibility in the negotiation process.

As per Claim 15, *McAtee et al.* disclose more than one instance of a service, and/or of a

negotiation for a service, to one or more requesting entities concurrently [col. 3, lines 43-50].

As per Claim 18, *McAtee et al.* disclose a distributed computing environment comprising

plural systems according to Claim 1 connected by a communications network, wherein at least

one of said systems is arranged to provide more than one instance of a service, or of a negotiation

for a service, to one or more requesting systems concurrently [col. 3, lines 43-50].

As per Claim 19, *McAtee et al.* disclose a distributed computing environment according to

Claim 18, wherein each of said systems is associated with one of a plurality of organizations, said

organizations together defining a virtual organization [col. 3, lines 43-50 (network system

suggests such a "virtual" arrangement].

As per Claim 20, *McAtee et al.* disclose a distributed computing environment according to

Claim 19, wherein the virtual organization exists for a pre-determined period [Id. (It is quite

common for corporate entities to form joint ventures in which they share resources for a pre-

determined period. Once the joint venture is dissolved, such a "virtual organization" would no

longer exist.].

As per Claim 22, *McAtee et al.* disclose that in the event a service provider and service

requester agree a contract to provide and accept a service respectively, a copy of the contract is

stored as a data structure representing the terms and conditions of the contract by both the service

provider and the service requester [Fig. 2 ("Print Invoice") The invoice is seen as a contract

between the parties].

As per Claim 23, *McAtee et al.* disclose a service provision system for use in distributed

processing environments, said system comprising;

service request processing means for identifying component processes for use in

provisioning the requested service [Fig. 5];

means to access an up-datable data store for storing conditions when established [col. 6, lines 7-45 (e.g., conditions include trigger conditions and time qualifiers)]; and

an output for providing a response to the service request, said response comprising an indication of availability of the requested service [Fig. 2 ("Determine Whether Goods in Inventory")];

wherein the processing means is adapted to process a service request by accessing one or more of the conditions in the data store, processing the request using the one or more conditions, and producing said response [The order will be processed if the item is in inventory].

McAtee et al. does not disclose negotiation means for use in establishing conditions applicable to provision of those component processes.

Wong teaches negotiation means for use in establishing conditions applicable to provision of those component processes [page 414, Section 2.3 (negotiation and compromise) E.g., the solution could be to provide the customer with a "rain check" or offer substitute merchandise or services)]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the flexible decision making of *Wong* into the service provisioning system of *McAtee et al.* The motivation would have been to increase customer satisfaction.

As per Claim 24, *McAtee et al.* disclose that one or more of said conditions may have an associated expiry time for storage in the data store [col. 6, lines 42-45].

As per Claim 25, *McAtee et al.* does not disclose that the processing means is adapted to detect an expired or abscent condition in the data store, which condition is applicable to a

component process for the provision of a requested service, and to trigger the negotiation means

to establish a substitute condition.

Wong teaches these limitations [Section 2.3; negotiation is triggered by failure to reach

agreement often resulting in compromise (i.e., a substitute condition)].

It would have been obvious to one of ordinary skill in the art at the time the invention was

made to combine the negotiation and compromise means of *Wong* with the service provision of

McAtee et al. The motivation would have been to provide a more flexible decision making

process, to increase customer satisfaction with the system.

As per Claim 26, *McAtee et al.* discloses initiation means to initiate one or more

component processes in provision of a requested service [Fig. 3].

As per Claim 27, *McAtee et al.* discloses that provisioning a requested service requires

provision of a selected set of component processes and wherein the processing means is adapted

to process a service request by accessing said stored set, and producing said response

[Fig. 5 (the WIP is a set of processes that are selected based upon an event or prior process has

completed].

McAtee et al. does not disclose that the negotiation means establishes and stores a set of

conditions, applicable to provision of the component processes of the selected set. *Wong* teaches

these limitations [Section 2.1 to 2.3 - negotiation involves agents revealing to each other their

conditions and ordered preferences, then forming a compromise or some other solution to the

conflict]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the negotiation of *Wong* with the service provision system of *McAtee et al.* The motivation would have been to provide a flexible decision making process.

18.   Claims 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over McAtee et al., U.S. Patent No. 5,301,320, in view of *Software Agents* (Ketchpel; Communications of the ACM).

As per <u>Claim 16</u>, *McAtee et al.* does not disclose a data store containing data relating to the services offered by the system and to one or more entities which have an interest in receiving information relating to enactment of one or more of said services, means to access said data store in response to a service request and establish that information should be transmitted to one or more of said entities and means to transmit said information to said entities. *Ketchpel* teaches these limitations [page 5; contract-net approach ("request for proposals")]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the contract approach of *Ketchpel* with *McAtee et al.* The motivation would have been to increase mutually beneficial interaction between the system and entities.

As per <u>Claim 17</u>, *McAtee et al.* discloses that the means to transmit are operable in the absence of a specific request to transmit the information from the entities [col. 5, line 24 to col. 6 45 (event goal triggered by the occurrence of an event)].

References Cited

19.   The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure:

Sisley et al. (5,467,268 and 5,737,728) disclose a method for resource assignment and

scheduling.

Randell (5,745,687) disclose a system for distributed workflow in which a routing node

selects the next node to be performed within a workflow procedure.

Lagarde et al. (5,745,754) disclose a sub-agent for fulfilling requests of a Web browser

using an intelligent.

Toda (5,742,776) discloses a decision support system that collects and analyzes

information on which a decision is to be made, and presents a plurality of alternative decisions.

Software Agents Prepare to Sift the Riches of Cyberspace (Science) discloses the uses and

benefits of the software agent paradigm.

Enabling Agents to Work Together (Guha et al; Communications of the ACM) discloses

how intelligent agents operate to share knowledge.

Conclusion

20.   Any inquiry concerning this communication or earlier communications from the examiner

should be directed to George Morgan whose telephone number is (703) 306-2906. The examiner

can normally be reached on Monday to Friday from 8:30 a.m. to 5:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor,

Todd Voeltz, can be reached on (703) 305-9714. The fax phone number for the organization

where this application or proceeding is assigned is (703) 305-0040.

Any inquiry of a general nature or relating to the status of this application or proceeding

should be directed to the receptionist whose telephone number is (703) 305-3900.

August 27, 1999

/D.M./

F Poinvil /
FRANTZY POINVIL
PRIMARY EXAMINER
AU 2761